

Notice of Allowability

Application No.

10/689,809

Applicant(s)

DICHIARA, ROBERT A.

Examiner

Ling X. Xu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/14/2005.
2. ☒ The allowed claim(s) is/are 1,3-16,18-32 and 34-37.
3. ☒ The drawings filed on 20 October 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 10/20/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 3/14/2005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. David K. Benson on 3/14/2005.

The application has been amended as follows:

In claim 1, line 2, between "core material;" and "and", insert -- having a surface; a tough low temperature cure coating (TLTC) infiltrating the surface, the TLTC comprising a cured ceramic powder combined with a binder;--;

In claim 1, line 3, between "an oxide ceramic matrix composite (CMC)" and "comprising", delete "," and insert --covering the surface infiltrated with the TLTC, the oxide CMC--;

In claim 1, lines 5-6, change "fiber," to --fiber.-- and delete "wherein said ceramic core material has at least one surface covered by said oxide CMC.";

Cancel claim 2;

In claim 3, line 1, change "claim 2" to -- claim 1--;

In claim 4, line 1, change "claim 2" to -- claim 1--;

In claim 5, line 1, change "claim 2" to -- claim 1--;

In claim 6, line 1, change "claim 2" to -- claim 1--;

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In claim 7, line 1, change “claim 2” to -- claim 1--;

In claim 8, line 1, change “claim 2” to -- claim 1--;

In claim 9, line 1, change “claim 2” to -- claim 1--;

In claim 13, line 1, , replace “step of:” with -- steps of: infiltrating a surface of said ceramic core material with a tough low temperature cure coating (TLTC) comprising a cured ceramic powder combined with a binder; and --;

In claim 13, line 2, replace “covering a surface of a ceramic core material” with -- covering the TLTC-infiltrated surface of the ceramic core material --”;

Cancel claim 17;

In claim 18, line 1, change “claim 17” to -- claim 13 --;

In claim 23, line 1, change “claim 17” to -- claim 13 --;

In claim 24, line 1, change “claim 17” to -- claim 13 --;

In claim 25, line 1, change “claim 17” to -- claim 13 --;

In claim 26, line 1, change “claim 17” to -- claim 13 --;

In claim 27, line 1, change “claim 17” to -- claim 13 --;

In claim 28, line 1, change “claim 17” to -- claim 13 --;

In claim 32, line 1, , replace “step of:” with -- steps of: infiltrating a surface of said ceramic core material with a tough low temperature cure coating (TLTC) comprising a cured ceramic powder combined with a binder; and --;

In claim 32, line 2, replace “covering a surface of a ceramic core material” with -- covering the TLTC-infiltrated surface of the ceramic core material --”;

Cancel claim 33;

Allowable Subject Matter

2. Claims 1, 3-16, 18-32 and 34-37 are allowed.

The following are the closest prior arts:

Merrill et al. (US 2004/0110041)

Merrill discloses a ceramic tile with a ceramic matrix component (CMC). The CMC can be a metal oxide CMC with a reinforcing fibers such as silica or alumina. Merrill does not disclose or suggest a ceramic tile comprising a ceramic core material having a tough low temperature cure coating (TLTC) infiltrating the surface of the ceramic core material and the TLTC comprising a cured ceramic powder combined with a binder as recited in claims 1, 13 and 32.

Cazzate et al. (US 6,489,001)

Cazzate discloses a single ceramic tile comprising an aluminosilicate composition with a cover component comprising a prepreg fiber reinforced non-cured ceramic matrix component (CMC) wrapped around the tile. Cazzate does not disclose or suggest that the CMC material is an oxide CMC. Cazzate also does not disclose or suggest a ceramic tile comprising a ceramic core material having a tough low temperature cure coating (TLTC) infiltrating the surface of the ceramic core material and the TLTC comprising a cured ceramic powder combined with a binder as recited in claims 1, 13 and 32.

Hogenson (US 5,626,951)

Hogenson discloses a thermal insulation tile comprising a rigid ceramic insulator covered with woven ceramic material impregnated ceramic matrix (CMC). Hogenson

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does not disclose that the CMC material is an oxide CMC. Hogenson also does not disclose or suggest a ceramic tile comprising a ceramic core material having a tough low temperature cure coating (TLTC) infiltrating the surface of the ceramic core material and the TLTC comprising a cured ceramic powder combined with a binder as recited in claims 1, 13 and 32.

Butner et al (US 2002/0197465)

Butner discloses that the oxide fiber reinforced ceramic matrix composite (CMC) is stable for long-term exposures to high temperature. Butner does not disclose or suggest the ceramic tile structure as recited in claims 1, 13 and 32.

No prior art, alone or in combination with any of the prior arts listed above was found to disclose or suggest a ceramic tile structure as recited in claims 1, 13 and 32.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 571-272-1546. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ling X. Xu
Examiner
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